

Appl. No. 10/035,720
Atty. Docket No. 8774
Amdt. dated October 1, 2003
Reply to Office Action of 07/03/2003
Customer No. 27752

REMARKS

Claim 18 is rejected under 35 USC 112, second paragraph, as allegedly indefinite for failure to specify which said static mixer is recited at the end of the claim. Applicants respectfully thought that the static mixer at issue was the recited static mixer extending substantially perpendicular to the longitudinal direction. However, appropriate correction has been made in accordance with the Examiner's suggestion. Applicants gratefully acknowledge the Examiner's suggestion of how to resolve and overcome this rejection.

Claim 19 is rejected under 35 USC 102(b) as anticipated by Hill et al. (2,803,041). Hill et al. teaches an injection block 19 having cylindrical injection passages 24 which terminate at injection tips 26. Some of the injection tips extend into passageway 22. The injection passages receive material 54. Claim 19, as amended hereunder, requires a die having a static mixer disposed therein. The static mixer is comprised of a plurality of bars which admit energy into the cavity of the die. This arrangement provides the benefit that the energy may be used to initiate curing of material in the die during the extrusion process, as noted in the specification (10:13-20). Such an arrangement is not taught by Hill et al., nor are the benefits achievable from the teachings of Hill et al. Accordingly, Applicants respectfully submit that Claim 19 is neither anticipated nor rendered obvious by Hill et al. The Examiner is respectfully requested to reconsider and allow Claims 19-20.

Claims 1-4, 6, 9, 10, 15, 17 and 18 are rejected under 35 USC 103(a) as unpatentable over Kessler (4,478,516). Kessler teaches a forming apparatus having plates 32 with inlets 44, 54 therethrough. The inlets open to converging or diverging passages 40, 50, respectively.

Claim 1 is amended to specify the static mixer causes flowable material to separately flow in a first direction having a component parallel to the major axis and in a second direction of a component parallel to the minor axis. Basis is found in commonly assigned U.S. Application Ser. No. 09/911,774, filed June 24, 2001 and incorporated by reference into the present specification (5:21-24). This application issued April 22, 2003 as U.S. Pat. No. 6,550,960 B2. Basis for this portion of the amendment is found therein (4:33-56, Figs. 1-2).

Claim 2, as amended hereunder, requires a plurality of static mixers disposed in series. Basis is found in the instant specification (8:16-23). No new matter is added. Claim 2 is further amended to require the first static mixer impart flow in the first direction, and a second static mixer impart flow in a second direction, the directions defining an included angle of at least 45 degrees therebetween relative to the flow direction. Basis is again found in commonly assigned

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U.S. Application Ser. No. 09/911,774, filed June 24, 2001 and incorporated by reference into the instant specification (5:21-24), now U.S. Pat. No. 6,550,960. Basis for this portion of the amendment is found therein (4:33-56, Figs. 1-2).

The passages of Kessler '516 axially converge/diverge relative to the longitudinal direction of the passages. Such passages cannot provide for separate flow in a first direction and a second direction, as required by the instant claims. The two separate directions required by Claims 1-2, as amended, provide for greater mixing than is achievable in the Kessler '516 device having converging/diverging passages. Further, the instant claims allow for flexibility in separation of the stages which provide the bilateral mixing, and hence greater control over the mixing process. Such benefits are neither suggested by nor achievable with the Kessler device. Accordingly, Applicants respectfully request all claims rejected over Kessler be reconsidered and allowed with the amendments made hereunder.

Claims 7, 8 and 11 are rejected under 35 USC 103(a) over Kessler and further in view of Chen et al. (5,372,765). Chen et al. teaches an extrusion device for thermoplastic resin. The device has separate branch streams with static mixers 9, 37 therein. The static mixers are schematically shown to include three stages. Each stage is shown to impart flow in the same direction relative to the longitudinal direction. The static mixers are not in series as required by Claim 2. Combining Chen et al. with Kessler yields a thermoplastic extrusion device having the Kessler plates in place of the three-stage static mixers. This combination fails to teach either the static mixers disposed in series required by Claim 2 or the static mixers imparting separate bilateral flow patterns as required by Claim 1. Alternatively, the combination may be thought to yield the plastic extrusion apparatus having three static mixers in series, each static mixer having three stages imparting flow in the same direction relative to the longitudinal direction of material flow. Again, the claimed invention having separate flow directions does not result. Accordingly, the cited combination fails to teach or render obvious the invention and benefits of Claims 7, 8 and 11.

Claims 12, 13 and 16 are rejected under 35 USC 103(a) as unpatentable over Kessler in further view of Chen and Hill et al. Claim 14 is rejected under 35 USC 103(a) as unpatentable over Kessler et al. and in further view of Hill et al. As noted above, Hill et al. simply teaches the inlet tubes. Adding Hill et al. to the Kessler/Chen combinations fails to produce the claimed invention. Accordingly, the Examiner is respectfully requested to reconsider and withdraw any rejection based on such combinations.

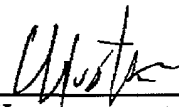
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Claims 1-20 are provisionally rejected for obviousness-type double patenting over Claims 1-17 of copending Application Ser. No. 10/035,726 in view of Kessler '526. A terminal disclaimer is enclosed herewith to overcome this rejection.

All matters raised by the Office Action are believed to be addressed by the amendments and comments made hereunder. The Examiner is respectfully requested to enter the foregoing amendments and to reconsider and allow all claims remaining in the application.

Respectfully submitted,

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